

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1–7 (CANCELED)

8 (PREVIOUSLY PRESENTED). A soliton transmission method, comprising:

forming a group of two or more partially overlapping short pulses, said pulses being electromagnetic radiation pulses, such as laser light pulses, and having a significantly same wavelength to stay as a group;

transmitting data by sending such pulse group(s) as solitons, the data being encoded in said pulse groups by modulating:

- (a) individual pulses in a said pulse group,
- (b) and / or, the pulses of a said pulse group as a group;

receiving said pulse groups and decoding the data carried by them.

9 (CURRENTLY AMENDED). A soliton transmission method according to claim 8, comprising:

wherein individual pulses in a said pulse group are modulated by using one or more of the following:

- (a) position modulation,
- (b) phase modulation,
- (c) width modulation,
- (d) amplitude modulation,
- (e) polarization modulation;

wherein a said pulse group itself is modulated by using one or more of the following:

- (a) position modulation,

- (b) phase modulation,
- (c) width modulation with respect to the width of said pulse group,
- (d) width modulation with respect to the average width of the pulses in said pulse group,
- (e) amplitude modulation with respect to the highest amplitude of the pulses in said pulse group,
- (f) amplitude modulation with respect to the average amplitude of the pulses in said pulse group,
- (g) pulse number modulation with respect to the number of pulses in said pulse group;

wherein if individual pulses in a said pulse group are not polarization modulated, then said pulse group itself is optionally modulated with polarization modulation in addition to other used modulations;

~~wherein if said (g) type pulse number modulation is used, then the smallest number of pulses in a group is optionally one.~~

10 (PREVIOUSLY PRESENTED). A soliton transmission method according to claim 8, comprising:

using said pulse groups as components of data packets in packet based networks, like the Internet.

11 (PREVIOUSLY PRESENTED). A soliton transmission method according to claim 10, comprising:

switching optically said pulse group based data packets with respect to the polarization states of the pulses in a pulse group.

12 (PREVIOUSLY PRESENTED). A soliton transmission method according to claim 10, comprising:

using the following packet switching method for switching said pulse group based data packets:

a node computer sampling packets from incoming packet traffic, reading certain property(ies) of the sampled packets and predicting on the basis of said sampled property information the intermediate and / or final delivery addresses of the non-sampled packets;

the node computer switching the non-sampled packets according to the respective delivery address predictions to the appropriate output ports.

13 (CURRENTLY AMENDED). A soliton transmission method according to claim 10, comprising:

using the following packet switching method for switching said pulse group based data packets:

~~the header or other section of a packet containing occurrence information about certain subsequent packet(s) in the packet train which have certain intermediate or final delivery address(es), or certain other property(ies);~~

~~a node computer switching said appointed packets according to such advance knowledge of their properties to the appropriate output port(s).~~

transmitting an ad-hoc informant packet along with the packet traffic, the header or other section of said informant packet containing information which specifies the pattern according to which certain individual packets in the same packet traffic are mutually interleaved according to their plurality of different intermediate and / or final delivery addresses, said information individually distinguishing said packets and their addresses;

a node computer receiving said informant packet and using its information to distinguish said packets and their individual intermediate and / or final delivery addresses, and to switch said packets respectively to plurality of different appropriate output ports.

14 (CURRENTLY AMENDED). A soliton transmission method according to claim 10, comprising:

using the following packet switching method for switching said pulse group based data packets:

~~the header or other section of a packet containing a referring pointer to:~~

- ~~(a) — a property of a preceding packet in the same packet train;~~
- ~~(b) — or, to a property in an index of the most frequent packet properties having occurred in a packet traffic between two switching nodes carrying also said packet;~~

~~said property being an intermediate or final delivery address, or other property;~~

~~a node computer switching said packet to the appropriate output port according to said referred property.~~

the header or other section of a packet containing a direct reference to another packet in the same packet train, said reference individually distinguishing the referred packet and specifying its location in the packet train;

a node computer reading said reference and using it to locate the referred packet in the packet train, and either:

- (a) switching the referring packet to the appropriate output port according to a certain property of the referred packet,
- (b) or, switching the referred packet to the appropriate output port according to a certain property of the referring packet;

wherein said certain property is an intermediate or final delivery address, or other property.

15 (PREVIOUSLY PRESENTED). A packet switching method for packet based networks, especially for wide area networks like the Internet, comprising:

a node computer sampling packets from incoming packet traffic, reading certain property(ies) of the sampled packets and predicting on the basis of said sampled property information the intermediate and / or final delivery addresses of the non-sampled packets;

the node computer switching the non-sampled packets according to the respective delivery address predictions to the appropriate output ports.

16 (PREVIOUSLY PRESENTED). A packet switching method according to claim 15, comprising:

wherein the node computer reads / resolves one or more of the following properties of a sampled packet:

- (a) the delivery address,
- (b) the source address,
- (c) the delivery route,
- (d) the content type,
- (e) or, other packet properties.

17 (PREVIOUSLY PRESENTED). A packet switching method according to claim 15, comprising:

wherein the node computer reads only partly a sampled packet property.

18 (PREVIOUSLY PRESENTED). A packet switching method according to claim 15, comprising:

wherein the node computer intentionally arranges the packets going to a specific output port so that their mutual positions in a packet train follow certain pattern(s) with respect to their intermediate or final delivery addresses, or other properties.

19 (PREVIOUSLY PRESENTED). A packet switching method according to claim 18, comprising:

wherein the node computer reserves an own packet channel in a packet train going to a specific output port for each category of packets with a certain degree of predictability of intermediate or final delivery addresses, or other properties.

20 (CURRENTLY AMENDED). A packet routing method ~~packet switching method~~ for packet based networks, especially for wide area networks like the Internet, comprising:

~~a node computer reading / resolving the source address, content type or other property of a packet, which is not a delivery address;~~

~~the node computer switching said packet to the appropriate output port according to said read property.~~

node computer(s) segregating the packet traffic using the following method:

a node computer delivering through different segregated routes in the network the packets which have a same intermediate or final delivery address, using the following method:

a node computer reading / resolving the source address, content type or other property of a packet, which does not constitute a delivery address or a reference to a delivery address;

the node computer choosing for said packet a route according to said read property from among plurality of routes of which each is dedicated to deliver packets which have certain value(s) of said read property assigned to that route, said route chosen also to be suitable with respect to the intermediate and / or final delivery address of said packet;

the node computer delivering said packet to go through said chosen route.

Claim 21 (CANCELED)

22 (CURRENTLY AMENDED). A packet switching method for packet based networks, especially for wide area networks like the Internet, comprising:

~~the header or other section of a packet containing occurrence information about certain subsequent packet(s) in the packet train which have certain intermediate or final delivery address(es), or certain other property(ies);~~

~~a node computer switching said appointed packets according to such advance knowledge of their properties to the appropriate output port(s).~~

transmitting an ad-hoc informant packet along with the packet traffic, the header or other section of said informant packet containing information which specifies the pattern according to which certain individual packets in the same packet traffic are mutually interleaved according to their plurality of different intermediate and / or final delivery addresses, said information individually distinguishing said packets and their addresses;

a node computer receiving said informant packet and using its information to distinguish said packets and their individual intermediate and / or final delivery addresses, and to switch said packets respectively to plurality of different appropriate output ports.

Claim 23 (CANCELED)

24 (CURRENTLY AMENDED). A packet switching method for packet based networks, especially for wide area networks like the Internet, comprising:

~~the header or other section of a packet containing a referring pointer to:~~

- ~~(a) — a property of a preceding packet in the same packet train;~~
- ~~(b) — or, to a property in an index of the most frequent packet properties having occurred in a packet traffic between two switching nodes carrying also said packet;~~

~~said property being an intermediate or final delivery address, or other property;~~

~~a node computer switching said packet to the appropriate output port according to said referred property.~~

the header or other section of a packet containing a direct reference to another packet in the same packet train, said reference individually distinguishing the referred packet and specifying its location in the packet train;

a node computer reading said reference and using it to locate the referred packet in the packet train, and either:

- (a) switching the referring packet to the appropriate output port according to a certain property of the referred packet,
- (b) or, switching the referred packet to the appropriate output port according to a certain property of the referring packet;

wherein said certain property is an intermediate or final delivery address, or other property.

Claim 25 (CANCELED)

26 (NEW). A method for distinguishing dispersed packets, for packet based networks, especially for wide area networks like the Internet, comprising:

transmitting an ad-hoc informant packet along with the packet traffic, the header or other section of said informant packet containing information which specifies the pattern according to which the individual packets of a dispersed group of packets in the same packet traffic are interleaved with other packets of the packet traffic, said information individually distinguishing the dispersed packets of said group;

a node computer receiving said informant packet and using its information to distinguish said dispersed packets and to have a special treatment for them.

.....